



U.S. AIR FORCE

Air Force Agency for Modeling & Simulation

C4ISR Visualization Center (CVC) Capabilities Brief



Mr. Norm Murray

Director

(703) 695-5522

DSN 225-5701

norm.murray@pentagon.af.mil

www.cvc.hq.af.mil

Integrity - Service - Excellence



**DEPUTY CHIEF OF STAFF
WARFIGHTING INTEGRATION**
AF/XI Lt Gen Hobbins 695-6324
AF/XI-2 Mr. Thomas (SES) 697-1605

Col (S) Bartels 695-6829

**AF/XIE
Executive Services**

Maj Gen 697-

**AF/XIC
Director of C4ISR
Infostructure**

Col Quesinberry 588-6161

**AF/XICA
Airborne Integration**

Col Besson 588-6151

**AF/XICC
Ground Integration**

Lt Col Phillips 614-

**AF/XICI
Information Assurance
Integration**

Col Slavec 588-6166

**AF/XICS
Space & Enterprise
Integration**

Col Kovach DSN 779-6571

**AF Communications
Agency**

Col Jakowatz 428-1544

**AF Frequency
Management Agency**

Maj Gen(Sel) Pow 695-1833

**AF/XII
Director of C4ISR
Integration**

Mr Cawthon 588-2743

**AF/XIIV
Innovation**

Col Malone 588-5011

**AF/XIII
C4ISR Integration,
Concepts & Policy**

Maj Gen Crawford DSN 574-3271

AFC2ISR Center

Mr Tillotson (SES) 695-1839

**AF/XIW
Director of Architecture
and Operational Support
Modernization**

Wg Cdr Featherstone 588-6184

**AF/XIWA
Architecture &
Technology**

Col Citizen 588-5060

**AF/XIWM
Modeling and
Simulation**

Lt Col Harvey 588-6315

**AF/XIWS
Alignment and
Assessment**

Col Votipka DSN 970-5722

**AF Agency for
Modeling & Simulation**

Col Gregory 697-3943

**AF/XIP
Director of
Resource Planning**

Col Payne 695-4442

**AF/XIPP
Comm & Info Panel**

Lt Col Hanlin 588-5078

**AF/XIPR
Programming &
Analysis**

Mr Scott 697-1308

**AF/XIPS
Planning & Joint Matters**

As of 9 Jul 04



XI - XIW - AFAMS Mission Relationship

- ***XI Mission:*** C4ISR integration; Close the seams between, engage, and assess by integration of manned, unmanned, and space systems
- ***XIW Mission Area:*** C4ISR operational, system & technical architecture; policy, analysis
- ***AFAMS Mission Area:*** Full-spectrum Air Force M&S
 - C4ISR, operations, training, policy, analysis, S&T, acquisition, T&E, logistics, C4ISR visualizations and demonstrations, etc.

***AFAMS is the AF top-level leader, integrator,
and facilitator for Air Force Modeling and
Simulation***

Integrity - Service - Excellence



Air Force Agency for Modeling and Simulation, Orlando Florida

“Advancing Air Force Modeling and Simulation”

Role

Air Force lead for translating policy/direction into effective M&S capabilities integrated across the Air Force and with the rest of the Department of Defense

Chain of Command Laying the Foundation

- AF Chief of Staff
- AF/XI
- AF/XIW
- AFAMS
- M&S Foundations
- Databases/Repositories
- Standards/Coord Tools
- Architectures/Reqs
- AF M&S Strategy

People

- 21 Military
- 16 Civilians
- 49 Contractors
 - 86 Total

Liaisons

- AFRC
- AFRL
- AF/XO
- DMSO
- NSA
- SOCOM

Building the Community

- Publicizing M&S Story
- Education/Outreach
- Prof Development
- Adv Distr Learning
- Community Forums

Warfighter Applications

- Trng/Msn Rehearsal/Decision Spt
- AF M&S Training Toolkit
- Distributed Mission Operations
- Accelerated Acquisition
- Concept Initiatives/Demos
- Experiments/Tech Transition

Concept Visualization

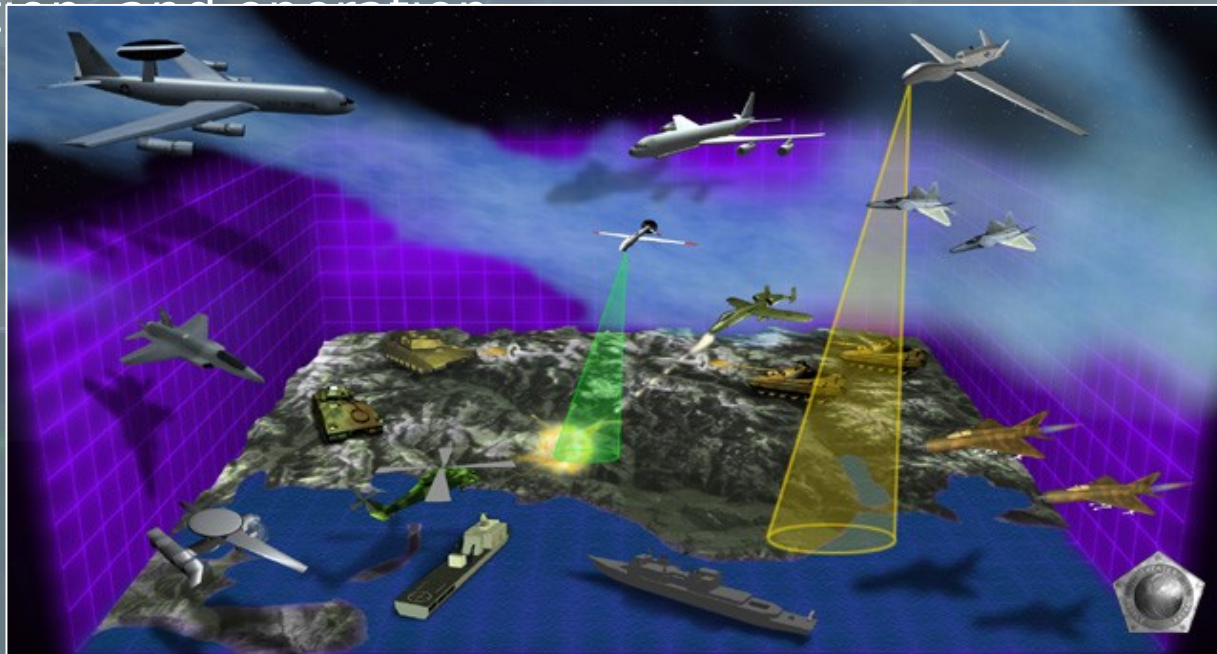
- Portal into M&S Exercises & Activities
- C4ISR Demos and Trials
- New Technology Demos



U.S. AIR FORCE

CVC Mission

- Provide a venue to showcase the outstanding work being done in the field (outside the Pentagon) to define/identify required C4ISR capabilities, and their development, acquisition and operation



Integrity - Service - Excellence



U.S. AIR FORCE

CVC Mission

- By providing visualizations and demonstrations of C4ISR systems and operational capabilities to senior military and government decision makers and the USAF and DoD officers supporting C4ISR programs.



Integrity - Service - Excellence



U.S. AIR FORCE

CVC Personnel

**Mr. Norm Murray
CVC Director**

**Capt Zach Krbec (Aug
04)
Deputy Director**

Operations Branch

**Mr. Gary Eckhardt (STI)
C4ISR Manager**

**Mr. Harold Robinson
SAIC Contract Manager**

**Mr. Tim Alger
Senior Graphic Artist**

**Mr. Bob Buffington
Graphic Artist**

**Mr. Eric Reuter
Graphic Artist**

**Mr. Robert Wilkie
Senior C4ISR Analyst**

**Ms. Michelle McGinley
AV/VTC Specialist**

**Ms. Pat Fields
Administrative Assistant**

**Mr. Kevin Hollingsworth
Systems Analyst**

**Mr. Pat Stevenson
Programmer Analyst**

**TSgt McBeth
Chief, Support
Branch**

**Mr. Mark Anderson
Systems
Administrator**

**Mr. Tony Wells
Hardware Technician**

**Mr. Zachary McCray
Hardware Technician**

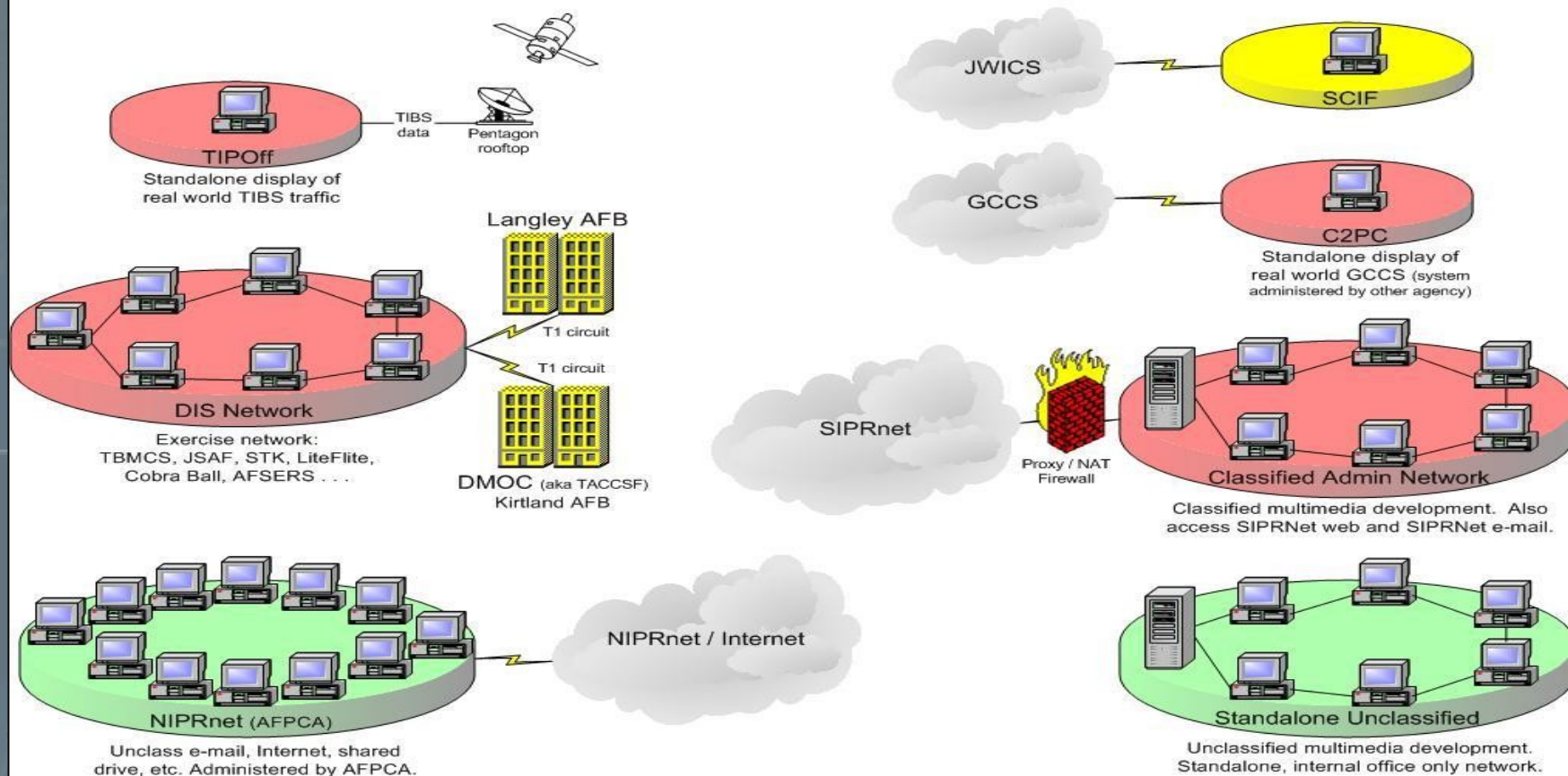
Integrity - Service - Excellence



CVC Infrastructure/Networks

U.S. AIR FORCE

CVC Systems A Logical (and simple) Display



Integrity - Service - Excellence



CVC Infrastructure/Systems

U.S. AIR FORCE

Constant Vision
Constant Sentinel

C2P
CJT

IWS

TIBS

TRAP

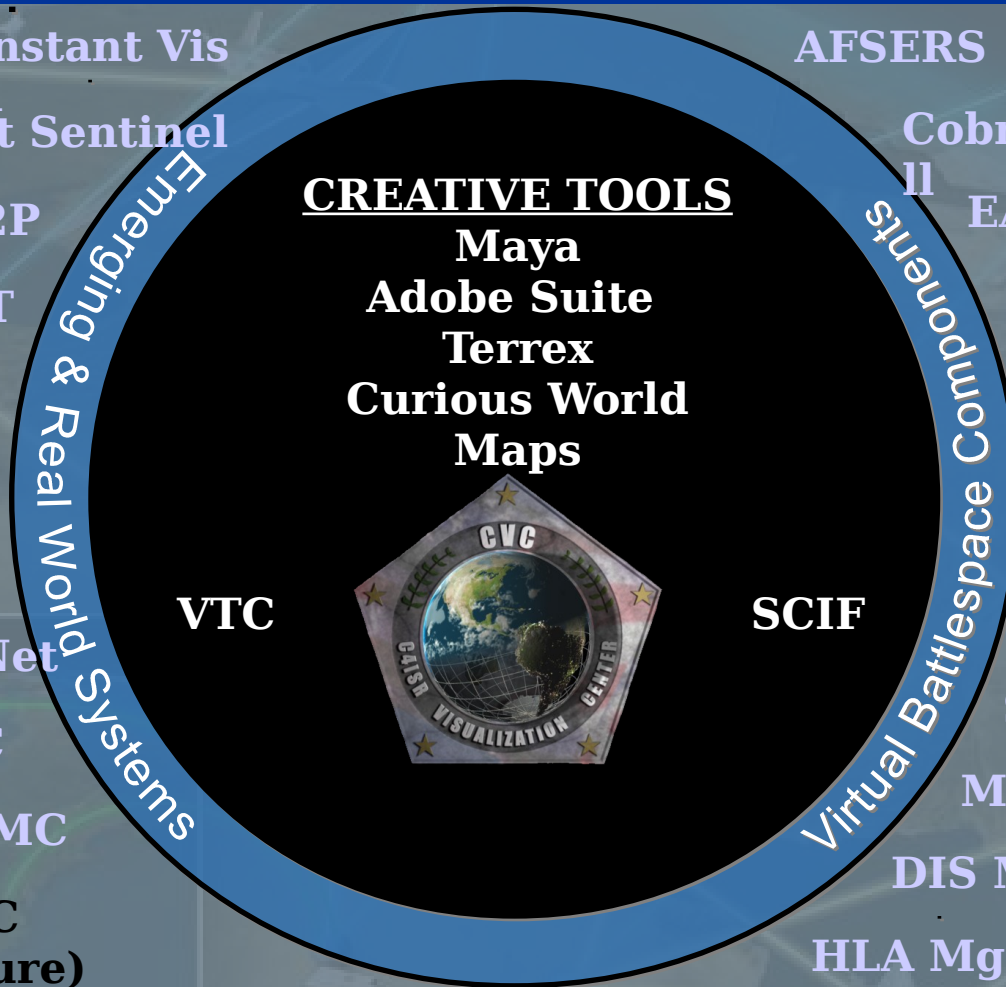
SIPRNet

JWIC

STBMC

SIWPC

(Future)



AFSERS

Cobra Ba
II

EADSIM

VBM

SJSAF

Liteflite

Mak Stealth

MoD Stealth

Satellite Tool Kit

Mak Logger

DIS Mgt Tools

HLA Mgt Tools

Integrity - Service - Excellence



U.S. AIR FORCE

CVC Mission Areas

- **Exercise and Experiment Support**
- **Demonstrate Emerging Technologies**
- **Visualizations/3-D Graphics**

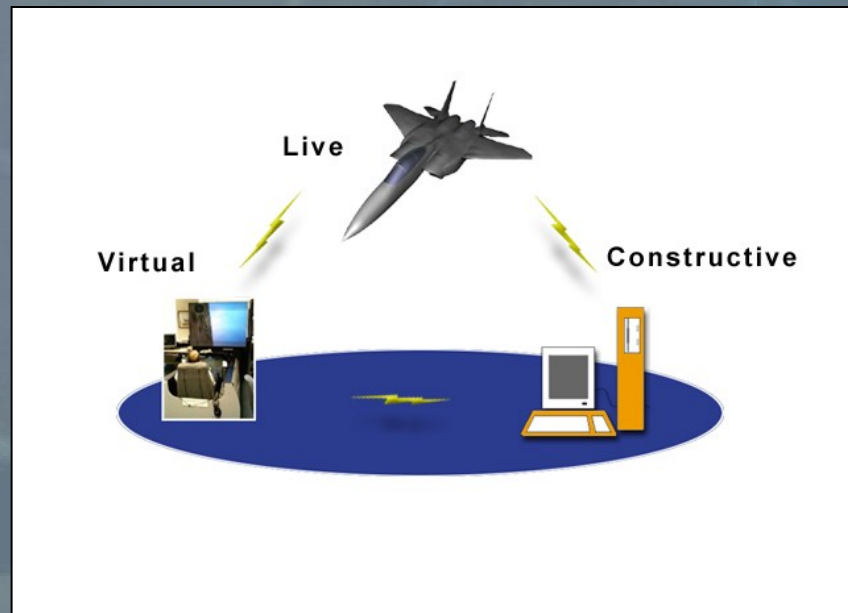


Integrity - Service - Excellence



Exercise & Experiment Support

JEA 04 06 02 01
Battle-Space 00
Global Engagement 03
JESAC 01 03 04
Global Engagement 03 02
Global Engagement 04 06 02 03
Global Engagement 04 06 02 03

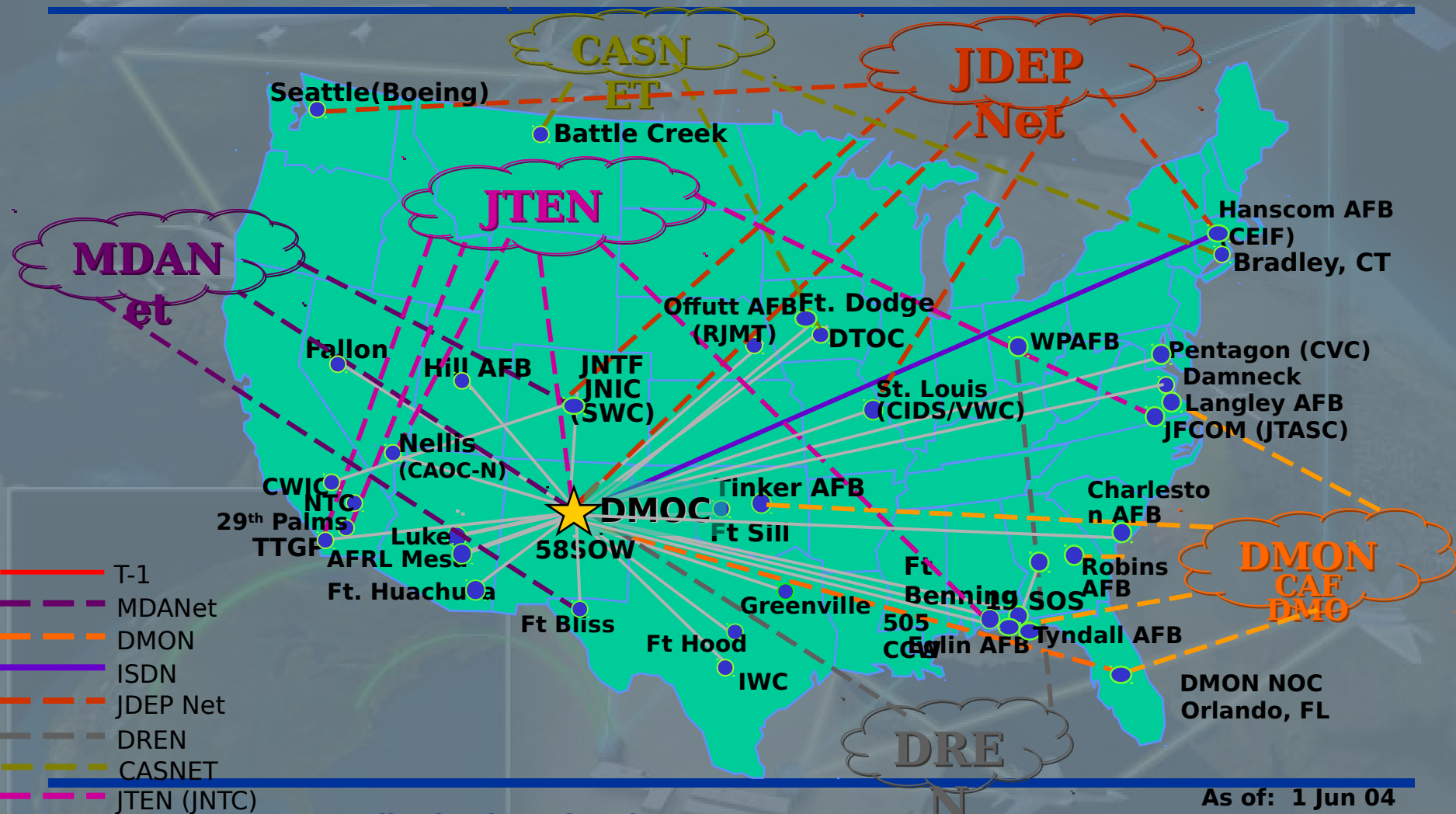


Integrity - Service - Excellence



U.S. AIR FORCE

DMOC Networks



Not all "cloud" nodes shown!

As of: 1 Jun 04



U.S. AIR FORCE

Virtual Flag VTC

VF04-3 VTC between CSAF and AF/XI on 5 May 2004; some of the participants included:

AFAMS/CVC Gallery (Pentagon):

- *Gen Jumper (CSAF)*
- *Lt Gen Sherrard III (AF/IRE)*
- *Mr Thomas (AF/XI-2)*
- *Maj Gen Lorenz (SAF/FMB)*
- *Maj Gen Mentemeyer (AF/A-XO)*
- *Maj Gen Sullivan (AF/XP-MA)*
- *Mr. Manclark (AF/TE)*
- *Brig Gen Power (AF/XII)*
- *Brig Gen Peterson (AF/XOO)*

ACC:

- *Lt Gen Wright (ACC/CV)*
- *Col Yates (ACC/ADO)*



DMOC Kirkland AFB:

- *LT Gen Hobbins (AF/XI)*
- *Col Votipka (AFAMS/CC)*
- *Lt Col Weigand (DMOC/CC)*
- *Exercise attendees*

CAOC-N Nellis AFB:

- *Maj Gen Woods*

Chief's vision for DMO



U.S. AIR FORCE

JEFX

Representatives from the following organizations attended at least one JEFX '02 presentation:

- *Army Chief of Staff*
- *AF Chief Scientist*
- *SAF/AQ, SAF/AQI*
- *AF/XI, XII, XIC, XIW*
- *AF/XOO, XOR, XOI, XOS, XOX*
- *NRO*
- *N6, N78*
- *IDA*
- *Local TV, DoD Publications (AF Magazine, DoD Times), Civilian Publications (St Louis Post Dispatch)*



Resulted in AFEO incorporating the use of the CVC in future JEFX marketing ConOps

Integrity - Service - Excellence



U.S. AIR FORCE

CVC Mission Areas

- **Exercise and Experiment Support**
- **Demonstrate Emerging Technologies**
- **Visualizations/3-D Graphics**



Integrity - Service - Excellence



Demonstrate Emerging Technologies

- **C2 Demo** - to Chief of Staff Air Force
- **ARVO** - (Augmented Reality Viewing Option)
- **3D VTC** - Teleportech-EDS
- **AFMSS Portal** - Air Force Mission Support System
- **Joint Targeting Tool Box** - (Tool set that supports joint targeting)
- **ISR-M** - Intelligence, Surveillance, Reconnaissance Manager
- **MAAP TK** - Master Air Attack Plan Tool Kit
- **ISR Warrior** - Intelligence, Surveillance, Reconnaissance tool
- **TACP** - Tactical Air Control Party Modernization Program
- **NITES** - Naval Integrated Tactical Environmental Subsystem
- **ADOCS** - Automated Deep Operations Coordination System
- **NASM/WARSIM** - (Theater Battlestaff Training)
- **OPUS** - (ATO/ACO parsing with 2-D fly-out capability)

Integrity - Service - Excellence

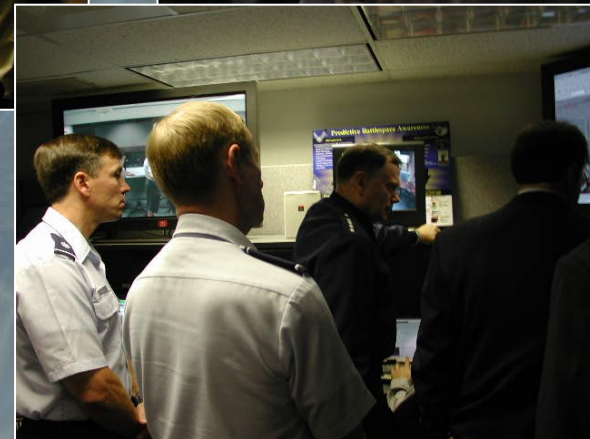
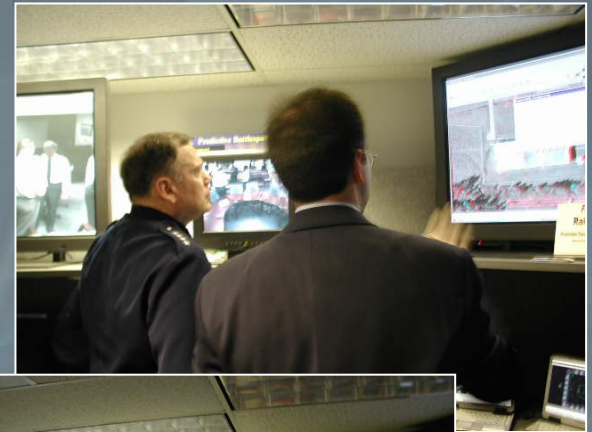


U.S. AIR FORCE

CVC C2 Demo

Representatives from the following organizations attended at least one C2 presentation 29 July 2003:

- CSAF
- SAF/AQ, SAF/AQI
- AF/XI, XII, XIC, XIW
- AF/XOO, XOR, XOI
- ESC/CX
- AFC2ISRC



*Resulted in CVC Selection
for future demonstrations*

Integrity - Service - Excellence



U.S. AIR FORCE

CVC Mission Areas

- **Exercise and Experiment Support**
- **Demonstrate Emerging Technologies**
- **Visualizations/3-D Graphics**

CVC Demo



Scale Kill Munitions (SKIM)

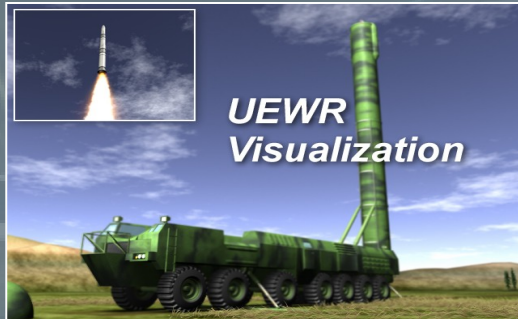
Integrity - Service - Excellence



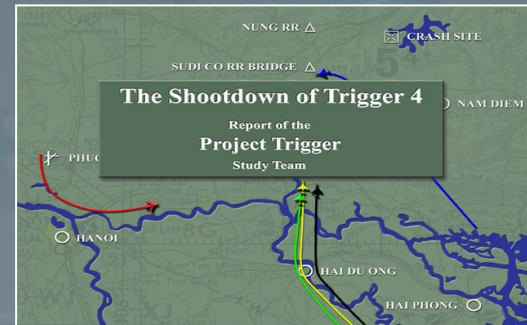
U.S. AIR FORCE

Visualizations

ANALYSIS



Visualization for National Missile Defense

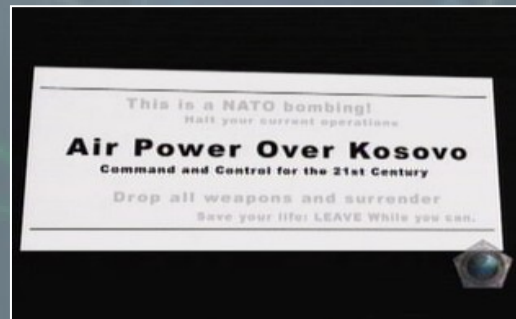


Visualization for Chief of Staff Air Force

REAL WORLD



Video for SAFAQ



Video for Secretary of Air Force



Movie Short for Secretary of Air Force

Integrity - Service - Excellence

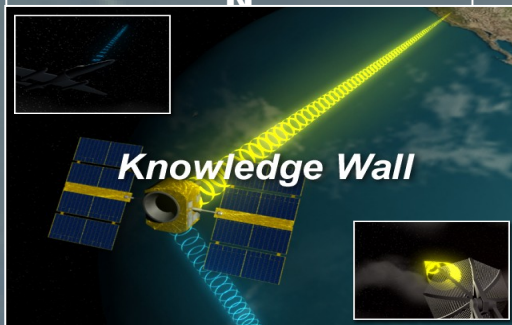


U.S. AIR FORCE

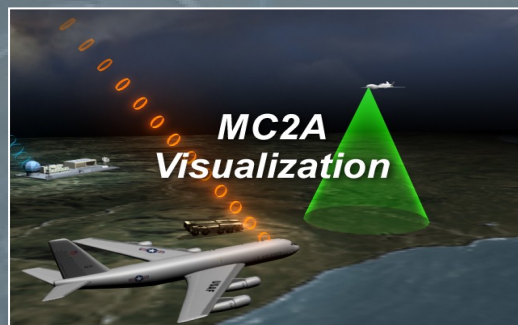
Visualizations

CONCEPTUALIZATION

N



Movie Clips for AFC2 ISRC/CC

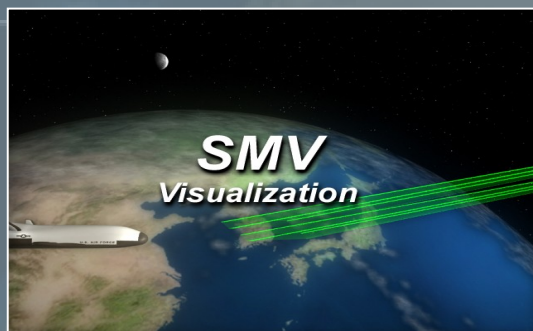


Visualization for AFEO



Visualization for AF/XO

EDUCATION



Visualization for DXOC



Video for MS&A Caucus



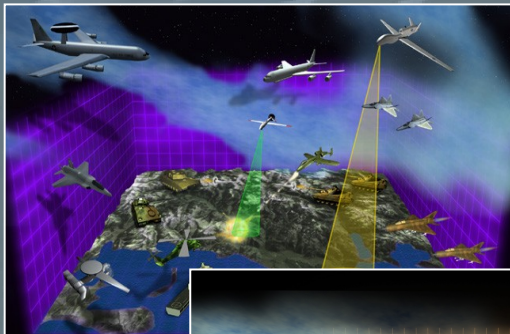
Video for AXOC

Integrity - Service - Excellence



3D Graphics and Illustrations

U.S. AIR FORCE



Images for JSB Ignition Events



SBIRS image for AF/XO



*Image for NATO AWACS Detachment Commander from
Secretary of Air Force*

Integrity - Service - Excellence



U.S. AIR FORCE

Current CVC Activities

XOIRB Aerostat visualization

(PTD) Persistent Threat Detection

Visiting Battle Labs to Determine Support Potential

Space, C2, Force Protection, Information Warfare

JEFX 04 Support (19 July to 6 Aug)

First Wave Support (NATO DMO Event)

DMOC Support

HEL Sim Terrain Generation

Interservice/Industry Training, Simulation & Education Conference (I/ITS)

Theater Battle Management Core System-Unit Level (TBMCS-UL)

Pending Demo with AFC2ISRC



Integrity - Service - Excellence



U.S. AIR FORCE

Contacts

- **Mr. Norm Murray, Director** (703) 695-5522 DSN 225-5522
- **Capt Zack Krbec, Deputy Director** (703) 614-8651 DSN 224-8651
- **Harold Robinson, SAIC** (703) 693-0412
DSN 223-0412
- **Gary Eckhardt, STI** (703) 693-0411
DSN 223-0411
- **CVC Front Desk** (703) 693-0410
DSN 693-0410
- **CVC Web Site** <http://www.cvc.hq.af.mil>
- **AFAMS Web Site** <http://www.afams.af.mil>

Integrity - Service - Excellence



Air Force Agency for Modeling and Simulation, Orlando Florida



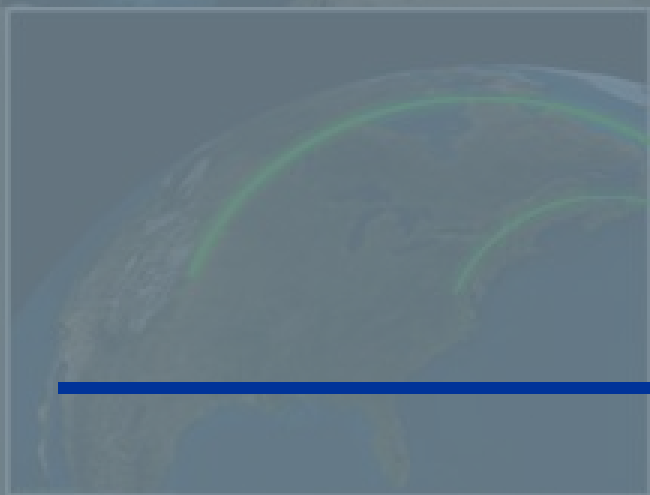
“Advancing Air Force Modeling and Simulation” ***TO SUPPORT THE WARFIGHTER***





U.S. AIR FORCE

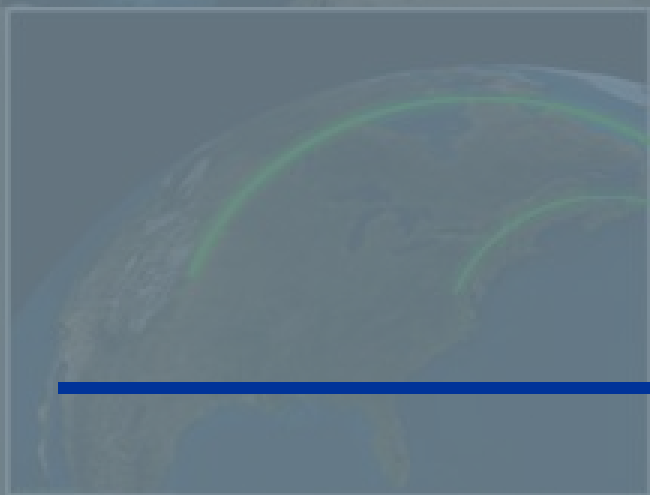
Questions





U.S. AIR FORCE

Backup Charts



Air Force Agency for Modeling and Simulation



Advancing Air Force M&S

